

**In the Claims:**

Please amend the claims as follows:

1. (Currently Amended) A chemical construct for use in solid phase synthesis comprising: a solid support Q having linked thereto via a connecting group Y a substrate R; the connecting group Y having first and second cleavage sites which are orthogonally and selectively cleavable; the second cleavage site being selectively cleavable to release the substrate; and the first cleavage site being located at a position between the second cleavage site and the solid support and being selectively cleavable to release a fragment Fr comprising the substrate and at least a portion of the connecting group Y; and a moiety comprising a sensitising group G in masked form ~~on the chemical fragment Fr~~ at the first cleavage site wherein the chemical fragment Fr contains a means for imparting a characteristic signature to the mass spectrum of the fragment.

2. (Cancelled)

3. (Previously Presented) A chemical construct according to claim 1 wherein the characteristic signature is provided by incorporating into the fragment Fr a peak splitting isotopic label.

4. (Original) A chemical construct according to claim 3 wherein the peak splitting isotopic label is defined one or more isotope pairs selected from  $^1\text{H}/\text{H}^2$  (D),  $^{79}\text{Br}/^{81}\text{Br}$ ,  $^{12}\text{C}/^{13}\text{C}$ ,  $^{14}\text{N}/^{15}\text{N}$  and  $^{16}\text{O}/^{18}\text{O}$ .

5. (Currently Amended). A chemical construct according to claim 1 wherein the means for imparting ~~a~~ the characteristic signature to the mass spectrum of the fragment is located between the first and second cleavage sites.

6. (Currently Amended) A chemical construct according to claim 1 wherein the first and second cleavage sites ~~cleavage sites~~ are defined by first and second linker groups  $\text{L}^1$  and  $\text{L}^2$ .

Claims 7-9 (Cancelled)

10. (Previously Presented) A chemical construct according to claim 1 wherein the sensitising group G is an ionisable group which is ionisable under mass spectrometric conditions.

11. (Cancelled)

12. (Previously Presented) A chemical construct according to claim 1 wherein the group G is a basic amino group.

13. (Original) A chemical construct according to claim 12 wherein the basic amino group is a primary amino group.

14. (Original) A chemical construct according to claim 12 wherein the basic amino group is a tertiary amino group.

15. (Original) A chemical construct according to claim 14 wherein the tertiary amino group is a cyclic amino group.

16. (Original) A chemical construct according to claim 15 wherein the cyclic amino group is N-methylpiperazino.

17. (Previously Presented) A chemical construct according to claim 12 wherein the basic amino group is derived from the photochemical cleavage of a carbamate group.

18. (Previously Presented) A chemical construct according to claim 3-17 wherein the peak splitting isotopic label is contained within a substituted or unsubstituted alkylene diamine group.

19. (Original) A chemical construct according to claim 18 wherein the alkylene diamine group is substituted by an N-benzyl group.

20. (Original) A chemical construct according to claim 19 wherein the N-benzyl group has a methylene group which is substituted with the peak splitting atom deuterium.

21. (Previously Presented) A chemical construct according to claim 1 wherein the first cleavage site is selectively cleavable by one type of chemistry selected from a group of chemistries consisting of cleavage under acid conditions, base catalysed cleavage, oxidative cleavage, reductive cleavage, nucleophilic displacement, cleavage by 1,2 *bis* nucleophiles, electrophilic displacement, and thermal, photochemical and enzymatic cleavage, and the second cleavage site is selectively cleavable by a different type of chemistry selected from the said group.

22. (Currently Amended) A chemical construct according to claim 21 wherein the first cleavage site is cleavable by one type of chemistry selected from:

- (i) photochemical cleavage,
- (ii) oxidation followed by cleavage through nucleophilic displacement,
- (iii) cleavage of a sulphonamide by nucleophilic displacement,
- (iv) cleavage of enamine groups with a 1,2-*bis* nucleophile; and
- (v) transition metal catalysed cleavage of allyloxycarbonylamino groups.

23. (Original) A chemical construct according to claim 22 wherein the second cleavage site is cleaved under acid conditions or by photolysis.

24. (Currently Amended) A chemical construct according to claim 21 wherein the first cleavage site is defined by a sulphonamide linker group, and the second cleavage site is optionally defined by a group, ~~such as a Rink linker~~, which is cleavable under acidic conditions.

25. (Currently Amended) A chemical construct according to claim 21 wherein the first cleavage site is defined by a thiopyrimidine linker susceptible to

cleavage by oxidation followed by nucleophilic displacement, and the second cleavage site is optionally defined by a group, ~~such as a Rink linker~~, which is cleavable under acidic conditions.

26. (Currently Amended) A chemical construct according to claim 21 wherein the first cleavage site is defined by a dde group and the second cleavage site is optionally defined by a group, ~~such as a Rink linker~~, which is cleavable under acidic conditions.

27. (Previously Presented) A chemical construct according to claim 21 wherein the first cleavage site is cleavable under photochemical conditions and the second cleavage site is defined by a group which is cleavable under acid conditions.

28. (Currently Amended) A chemical construct according to claim 21 wherein the first cleavage site is defined by a group ~~such as allyloxycarbonylamine~~ that can be cleaved by a transition metal ~~such as palladium (0)~~, and the second cleavage site is optionally defined by a group, ~~such as a Rink linker~~, which is cleavable under acidic conditions.

29. (Previously Presented) A chemical construct according to claim 21 wherein the first cleavage site is cleaved by oxidation followed by nucleophilic displacement.

30. (Original) A chemical construct according to claim 29 wherein the nucleophile is an amine.

31. (Currently Amended) A chemical construct according to claim 30 wherein the amine is a cyclic amine ~~such as piperidine~~.

Claims 32-51 (Cancelled)

52. (New) A chemical construct for use in solid phase synthesis comprising:

a solid support Q having linked thereto via a connecting group Y a substrate R;

the connecting group Y having first and second cleavage sites which are orthogonally and selectively cleavable;

the second cleavage site being selectively cleavable to release the substrate; and the first cleavage site being located at a position between the second cleavage site and the solid support and being selectively cleavable to release a fragment Fr comprising the substrate and at least a portion of the connecting group Y;

and a moiety comprising a basic amino sensitising group G in masked form at the first cleavage site wherein the chemical fragment Fr contains a peak splitting isotopic label located between the first and second cleavage sites for imparting a characteristic signature to the mass spectrum of the fragment;

wherein the first cleavage site is selectively cleavable by one type of chemistry selected from a group of chemistries consisting of cleavage under acid conditions, base catalysed cleavage, oxidative cleavage, reductive cleavage, nucleophilic displacement, cleavage by 1,2 *bis* nucleophiles, electrophilic displacement, and thermal, photochemical and enzymatic cleavage, and the second cleavage site is selectively cleavable by a different type of chemistry selected from the said group.

53. (New) A chemical construct according to claim 52 wherein the peak splitting isotopic label is defined one or more isotope pairs selected from  $^1\text{H}/\text{H}^2$  (D),  $^{79}\text{Br}/^{81}\text{Br}$ ,  $^{12}\text{C}/^{13}\text{C}$ ,  $^{14}\text{N}/^{15}\text{N}$  and  $^{16}\text{O}/^{18}\text{O}$ .

54. (New) A chemical construct according to claim 53 wherein the basic amino group is a primary amino group.

55. (New) A chemical construct according to claim 54 wherein the first cleavage site is cleavable by one type of chemistry selected from:

- (i) photochemical cleavage,
- (vi) oxidation followed by cleavage through nucleophilic displacement,
- (vii) cleavage of a sulphonamide by nucleophilic displacement,
- (viii) cleavage of enamine groups with a 1,2-*bis* nucleophile; and

(ix) transition metal catalysed cleavage of allyloxycarbonylamino groups.

56. (New) A chemical construct according to claim 55 wherein the second cleavage site is cleaved under acid conditions or by photolysis.

57. (New) A chemical construct according to claim 57 wherein the first cleavage site is cleavable under photochemical conditions and the second cleavage site is defined by a group which is cleavable under acid conditions.

58. (New) A chemical construct according to claim 57 wherein the second cleavage site is defined by a Rink linker.